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A

TREATISE

ON THE

TEETH.

Wherein an accurate Idea of their Structure is given, the Cauſe of their Decay pointed out, and their various Diſeaſes enumerated:

To which is added,

The moſt effectual Method of treating the Diſorders of the Teeth and Gums, eſtabliſhed by a long and ſucceſsful Practice.

The FOURTH EDITION.

By BARTH. RUSPINI,
SURGEON DENTIST.

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BRITISH MUSEUM

TO THE

PUBLIC.

IT is needleſs to uſher in this performance to the world, by a preface in the common form, proving the importance of the ſubject to be treated of, and the neceſſity of taking it up at this time. Both are ſufficiently felt, and acknowledged: it will therefore ſuffice, that I briefly expoſe my intention in the following ſheets, ſubmitting it to the candid

did and impartial public, whether the execution is anſwerable to the deſign.

I propoſe firſt, to give a diſtinct and accurate idea of the anatomy of the teeth, and the adjacent parts, to prevent as much as poſſible thoſe accidents which ariſe from the ignorance of unſkilful practitioners; in this point, who, unacquainted with the ſtructure of the parts, never fail to expoſe their patients to unneceſſary pain, and frequently to dangerous conſequences.

Secondly; to point out the more immediate cauſes of the diſeaſes of the teeth, and to ſhew how they may be mitigated, and in ſome meaſure prevented.

And thirdly; to introduce and recommend a more general attention than has hitherto prevailed, for the preſervation of the teeth, ſo uſeful to the purpoſes of life, and ſo ornamental, in that part of the creation, where beauty ſeems to have fix'd her peculiar ſeat.

A long, extenſive, and I believe

I may ſay, ſucceſsful practice, has enabled me to acquire the knowledge, which I here pretend to communicate to the world; the ſubject is in ſome degree new in this country; I therefore hope for indulgence, and claim no abſolute merit but in my intention: whatever ſhare I may be further entitled to from the performance itſelf, depends entirely upon the judgement of the reader to beſtow, and to whom I ſubmit it without reſerve.

A

TREATISE

ON THE

TEETH.

TEETH are given to us by nature in order to cut, break, and grind the neceſſary *aliments*, and to give a ſtronger and more articulate ſound to the voice.

What is chiefly to be conſidered in the teeth, is their *texture*, *number* and *figure*; *their exact order*, and *arrangement*, and the *time* they begin to appear.

In the teeth we may diſtinguiſh three parts, namely, the body, or *crown* of the tooth, which appears out of the gums, the middle, comprehending the ſpace covered by the *gums*, and called the *neck* of the tooth, and laſtly the *root*, that lies buried in the *ſocket*.

We find in a tooth three different ſubſtances. The firſt ſurrounds, and *covers* the body or *crown* of the tooth; it is thin, but grows thicker by degrees, as it draws near to the extremity of the *crown.* This ſubſtance is ſo cloſe, and hard, that no impreſſion, either with a file or any other ſharp inſtrument, can be made on it but with the greateſt difficulty and trouble; its colour is that of a pearl white, almoſt peculiar to the teeth.

This ſubſtance is what we call the *enamel,* and it forms itſelf before the tooth comes out; it grows ſtronger and finer untill the age of about 20, after which time it begins to wear off, by continual uſe; and ſo liable is it to decay, that we often ſee perſons of a middle age without the leaſt *enamel* on their teeth: ſuch a thing very frequently happens in old men; but altho' the *enamel* be loſt, or deſtroyed, ſtill the tooth is not ſo liable to decay as one may imagine, for we find many teeth firm and ſound in their internal ſubſtance, notwithſtanding they have been deprived of their outward *coat* for many years: but however, when once it is gone, the tooth lies more expoſed to the impreſſion of heat and cold, and to be acted upon by any thing acid and ſharp; and as for the enamel, the loſs of it can never be repaired.

The ſecond ſubſtance is not ſo cloſe as the former, and conſequently leſs hard; 'tis of a duſky white colour, and of the ſame nature as that of all human bones, altho' ſomewhat harder; it begins immediately under the *enamel,*

enamel, in the body of the tooth, and covers the neck, together with the whole root.

The third is that, which forms the moſt internal part of the teeth, and is called the BULB; it is ſoft in regard to the former, but pretty cloſe and firm if we compare it to the marrow of the other bones.

The outward covering or *enamel*, and the bony part of the tooth, are not ſuſceptible of the leaſt ſenſation.

The reaſon why teeth are affected by ſomething acid or ſharp is owing, to a certain *tremor* that communicates, and as it were, thrills thro' the nerve in the inward part; if this nerve is left uncovered by a *caries* of the bony ſubſtance, then we are tormented by the moſt excruciating pain.

Men at 25 and about three years after, have generally 28 teeth, 14 in each *mandible* or jaw.

This number encreaſes to 32, when the four teeth, called *dentes ſapientiæ*, appear; but as thoſe in ſome perſons come out ſooner, in others later, and in ſome never, we may *juſtly* ſay, that the number of teeth at a medium is thirty.

Some writers were formerly of opinion, that men had 32 teeth and women 28; but inſpection may plainly evince the abſurbity of this notion.

All the teeth that exceed the number of 32, may be reckoned as *ſupernumerary*. They generally puſh out between the *inciſores* or *fore teeth* of the upper jaw, and in ſuch a caſe the *inciſores* are increaſed in their number.

Theſe *ſupernumerary* teeth reſemble very much the lateral *inciſores* of the upper jaw.

And it happens that the *inciſores* alſo of the lower jaw, and the *molares* or grinders themſelves, have been multiplyed by intervening *ſupernumerary* teeth.

Teeth are generally divided into three claſſes, viz. the *inciſores* or cutting teeth, the *canini* or dog-teeth, and the *molares* or grinders.

The *inciſores* are eight in number; four in front of each *mandible*. They are called *inciſores*, becauſe their buſineſs is to cut the *aliments*, for which purpoſe their outward form at the extremities is peculiarly and wonderfully adapted. On the outer ſurface, next the lips, they are a little convex, and on that, next the palate, concave. The two *inciſores* in the middle of the upper jaw are longer, and often longer than thoſe on each ſide, or any of the other *inciſores*; for indeed the lateral upper *inciſores* exceed the lower in magnitude.

The two middle upper *inciſores* may be called the *greater*, thoſe on each ſide, the *leſſer*, and the four of the lower *mandible*, the *ſmall inciſores*. Theſe teeth deſcribe a kind of ſemicircle.

The *canini* are four in number; they lie one at each ſide next the *inciſores*, between them and the *molares*, in both jaws.

Theſe teeth are rather longer, more round, and leſs cutting than the *inciſores*.

Their uſe is to part things that are of a ſolid nature; in regard to their ſtructure, they appear to be very proper, not only for cutting aſunder any piece of ſolid food, but alſo for keeping it firm in the time of maſtication. They are called *canini*, becauſe they are very like to the teeth of a dog. The upper *canini* are alſo known by the name of *eye teeth*, becauſe it was anciently believed, that they had a kind of connection with the eyes, and that, by drawing any of them, the ſight was endangered; but daily experience has clearly demonſtrated, that ſuch a connection, and danger, are merely imaginary.

Immediately after theſe come the *molares* or grinders. They are 20 in number, five on each ſide of both jaws.

The two firſt in each row, or the neareſt to the *canini*, are the ſmall grinders, the others the large.

They are ſo called becauſe they are thicker, blunter, and more flat at their extremities, than the reſt. They operate like millſtones to bruiſe and grind the food.

Their figures are almoſt ſquare. The broad end, or top of each grinder, is divided into ſeveral little *eminences* and *cavities*, in ſuch a manner, that when the jaws ſhut, the *eminences* of the upper grinders are received into the cavities of the lower, and ſo *vice verſa.*

We cannot help admiring with aſtoniſhment the works of *Providence* in the figure and exact diſpoſition of all the teeth, which can never be too cloſely examined.

In order therefore to form a better idea of this admirable contrivance, it will be neceſſary to obſerve, that the lower jaw is a kind of a *leaver*, reſting itſelf at the extremity, where it joins by *articulation* to the *temporal bones*; the *aliments* are the reſiſting bodies, and the *elevatory* muſcles are the acting powers to overcome that reſiſtance by raiſing the jaw.

The grinders, which are rather blunt, ſtand nearer the centre of motion, and conſequently preſs more forcibly than the reſt; and this is the reaſon, that when we would bite ſomething remarkably hard, we generally place it between the *molares*; the *canini* and the *inciſores* can never act with ſo much force, being farther removed from the centre of motion, but their want of power is ſufficiently compenſated by their form.

In ſpeaking of the name and *characteriſtical* figure of the teeth, enough has been ſaid concerning that part of the teeth which appears out of the gums, viz. the *crown*, therefore we ſhall proceed to their neck.

Of the Neck of the TEETH.

The *Neck* is that part of the tooth covered by the gums, and a bony ſubſtance, which as we ſaid before, is of a duſky white colour.

In that part of the *neck* which joins to the gums, we find ſome little inequalities, or rather wrinkles, that cauſe ſome ſmall veſſels belonging to the gums, to adhere more cloſely to it: by this means, not only ſaline particles are prevented from getting into the *ſockets*, but the tooth is alſo rendered ſo firm and ſtrong, as to ſecure it from being ſhook or looſened.

Of the ROOT.

The *root* is that part which is buried in the *ſocket*, a continuation of the ſame ſubſtance and colour with that of the neck. It is covered by a membrane exactly ſimilar to that which lines the *ſocket*.

The root of each tooth is generally longer than the body, and is thereby rendered more able to bear any ſtrain or violent impreſſion, occaſioned ſometimes by chewing, gnawing, or breaking bodies of a hard nature.

In every root we find, towards the extremity, a little hole, which is a paſſage to the internal ſubſtance, or the *bulb* of the tooth.

There is alſo a little branch of an *artery*, a ſmall *vein*, and a nervous *filament*. This hole is cloſed up in old age, and then teeth loſe their *ſenſation*. Various are the figures of roots, and in each ſpecies of teeth, there is a particular one.

In all the *inciſores*, there is but one root to each tooth, which decreaſes gradually, and ends at laſt in a point.

The *canini* likewiſe have generally but one root; but there are ſome with two, quite divided through all their extent, and others only at the extremities; ſuch teeth however are very uncommon. The ſides of the roots of the *inciſores*, and the *canini*, are flat, and reſt upon the partition of each ſocket: which mechaniſm fixes more firmly theſe teeth in their ſockets: their necks and bodies being alſo flat laterally, and applied to the contiguous teeth, they receive mutually a ſtrong and conſiderable ſupport by being ſo well adapted to each other.

The ſmall grinders, namely, thoſe that come immediately after the *canini*, on each ſide of both jaws, have generally but one root; ſome are found with two, and ſome even with three; but ſuch a caſe is, very rare. The ſmall grinders that have but one root, have it always flat on the ſides, and therefore it ſupports itſelf in the ſame manner as the *inciſorers* and the *canini*.

The number of roots in the large *molares*, both in the upper and lower jaw, is very uncertain.

There are ſome large grinders, with one or two flat roots, and each root ſeems to be formed out of two joined together, diſtinguiſhed only by a little kind of channel, which riſes immediately from the *crown* of the teeth, and appears through all their extent, in order to mark out the diviſion. In other large grinders there are three, four, and ſometimes five roots, quite ſeparate from one another, extending themſelves in a large compaſs; for which reaſon, ſuch teeth are deeply rooted, and ſtick more cloſely to the *ſocket*.

Hence it happens, that the *molares* are not ſo eaſily drawn out of their ſocket whenever the adjoining tooth is wanting.

The laſt grinders, otherwiſe called *dentes ſapientiæ*, have fewer roots than the two teeth that precede them, and their body is not ſo thick. They have generally but two roots joined to each other, which very ſeldom appear ſeparate in all their extent, or even at their extremities; there have been ſome notwithſtanding, with three, four and even five roots, very plainly divided one from another; but this caſe is very rare.

The *crown* or body of theſe teeth, is almoſt all covered by the gums. Sometimes the roots of the large grinders are crookedly inclined towards the internal part of the *ſocket*, and ſometimes towards the external. Some are in an undulating form, and ſome are bent one againſt the other, or laid acroſs all together, and therefore it is a very difficult taſk to draw a tooth of this kind. For if ever one of theſe roots bends with a point quite oppoſite to another root that may be lodged in the little *cell* of the next *ſocket*, then theſe two roots will form, as it were, a pair of pinchers, and gripe with their extremities, the bony ſubſtance that parts one cell from another; and conſequently in drawing a tooth with thoſe roots, we are forced either to tear the bony partitions of the cells, or if this ſhould reſiſt, then either one or the other, and ſometimes both theſe crooked extremities muſt break, and in both caſes it may be of very bad conſequence. There is alſo great danger in drawing the upper *molares*, leſt you ſhould tear with the tooth, the bottom of the ſocket, together with a very thin bony *lamen* or ſcale that parts it from a cavity called the *maxillary ſinus*, for then the mucous membrane is unluckily torn, and this gives occaſion for *inflammations* and *ulcers* in that membrane, and may even produce a *cancerous* ulcer, as it has happened in many caſes.

Every root has a hole that communicates with the cavity in the middle of the crown; which cavity in the grinders is divided into as many ſmall ſinuſes as there are little eminences on the baſe, which is lined which a membrane that ſerves as a ſheath to the ſmall blood-veſſels and nerves, that are included in the internal part of the tooth. At the extremity of each root there is, as we ſaid before, one or more little holes that receive nerves, *blood-veſſels*, and perhaps abſorbent veſſels, which by their connection together, form what we call, the *chord* of the tooth; this *chord* paſſes through the cavity of the root, and conveys a proper nouriſhment to the ſubſtance of the tooth, and as it draws nearer the crown, it becomes thicker by means of the membrane that lines the cavity.

The *inciſores* and *canini* have their nerves from a *branch* of the fifth *pair*, called the upper *maxillary*, which inſinuates itſelf into the orbital canal, from whence it comes out, to be diſtributed on the face, and in its way ſends off filaments for all the roots of theſe teeth.

The *molares* likewiſe receive their nerves from the ſame *branch* through ſmall holes, formed in the hinder part of the external lateral ſurface of the upper *maxilliary* bone.

The *veins* and *arteries*, as they always join with the nerves, communicate themſelves the ſame way to the teeth. Theſe *arteries* are *branches* of the external *carotids* and the veins of the jugular.

The nerves of the lower jaw, are from another branch of the fifth pair, called the inferior *maxillary*, which enters into a canal on the inſide of the angle of the lower jaw, and is continued on each ſide to the chin, a little below the roots of the teeth; in paſſing along this bony canal, the nerve ſends off filaments to the roots of each of the *molares* and *canini*, and is then divided into two branches, one of which comes out of a hole of the bone in the chin, called the mental hole, to be then diſtributed to the chin and muſcles of the under lip.

The other branch paſſes on to the *ſymphaſis* of the lower jaw, and is diſtributed to the roots of the *inciſores* and *diploe* of the bone. The arteries which are ſent to the teeth of this mandible, have their riſe from the external *carotid*, and follow preciſely the courſe of the nerve through this bony canal, accompanying it through the whole of its diſtribution. The veins ariſe from the external *jugular*.

It therefore appears from what has been ſaid on this ſubject, that a tooth ach in the molares or grinders, muſt be more exquiſitely painful than in any of the other teeth; for as the *molares* are furniſhed with a greater number of roots, and each root has its artery, vein and nerve, it therefore follows that a tooth of five roots muſt have fifteen ſenſative bodies; which, if expoſed to heat and cold, by a caries of the bony matter, will *cæteris paribus* produce a greater quantity of pain, than that of a tooth with a ſingle root.

Of the SOCKETS.

The ſockets are cavities formed in the jaw-bones, for the receiving and fixing the teeth; but theſe will be better underſtood, by giving a previous idea of the mandibles in general, which have ſo great a ſhare in forming the countenance; for if the teeth be wanting in either jaw, the lower will be brought ſo much the nearer to the upper, by the ſtrong action of the temporal muſcles, as to make the chin and noſe approximate one another, and ſpoil the beauty and ſymmetry of the face.

The mandibles may be conſidered as two bony arches lying parallel to each other: The lower jaw moving on its *condyles*, and the upper, which is properly compoſed of two bones that are firmly united before, and along the palate, ſo as to form a conſiderable part of that bony arch. This mandible is firmly attached to the other bones of the face; it has a cavity on each ſide, directly above the roots of the grinders, which is ſometimes opened by drawing teeth with long roots, that have pierced into it.

The lower jaw is likewiſe compoſed of two bones, eſpecially in the infant ſtate; which are firmly united at the *ſymphaſis* of the chin, ſo as to make but one bone in adults. This bone is remarkably hard in the lower part, altho' ſomewhat ſpungy on its upper, in order to afford a more convenient bed for the teeth: It has no cavity, ſave the alveolary canal, which runs under the roots of the teeth, and tranſmits to them their blood-veſſels and nerves.

After this general idea of the ſtructure of the mandibles, we ſhall now treat of the ſockets in particular; which are cavities formed by the teeth in the *diploe*, or ſpungy ſubſtance of the jaw bones, divided into as many little *foſſulæ* as there are roots of each tooth. Theſe little cavities are lined with a thin elaſtic ſcaly ſubſtance, not ſo hard as the other parts of the bone, and ſufficiently pliable to become a perfect mould for the teeth, which in caſes of violent compreſſion or ſhocks, gives way, ſo as to prevent in ſome meaſure the teeth from being looſened or broke.

We do not find in the jaws of infants the ſockets intirely form'd, at leaſt they do not appear ſo, for there are but ten or twelve in each *mandible*, and theſe not deep; all the ſockets in thickneſs are not alike, for each ſpecies of teeth have their particular ones.

The *inciſores* of the upper jaw have their ſockets thinner than thoſe of other teeth, and the *canini* theirs ſtronger, conſequently thicker than the *inciſores*, or even the ſmall *molares*. The firſt large grinder has its ſocket ſtronger than the ſecond, and laſt grinder.

In the *inciſores* of the lower jaw, we find their ſockets thinner, than in all other teeth of that *madible*, and this is the reaſon that thoſe teeth are more liable to ſhocks, and it is likewiſe eaſier to draw them. The *canini* have their ſockets thicker than the *inciſores*, and the ſmall grinders; but the ſmall grinders have theirs thicker than the *inciſores* of this jaw. The firſt large one of the molares, has not the ſocket ſo thick as the ſecond and third, which laſt one has it thicker, becauſe of the *apophyſis coronoides*, and that is the reaſon why it proves generally very difficult to draw.

Theſe ſockets, when teeth are drawn, or naturally fail, are generally deſtroyed in a very ſhort time, inſomuch that it is almoſt impoſſible to perceive any marks of them, as we daily ſee in examining the *mandibles*. But if ever in drawing a tooth, ſome part of the ſocket was to be torn, then the ſides would be found not quite ſo thick, nor ſo firmly joined in that place. The ſockets are outwardly covered, and lined inwardly, with a membrane or *perioſtium*, common with the root of the tooth: it is a continuation of the *perioſtium* that covers the others bones, and of the ſame membrane that lines the internal part of the mouth.

Of the GUMS.

The fleſhy part that ſurrounds the ſocket, is called the gums; theſe are made of a hard ſubſtance, rather *fibrous* than glandular. They are penetrated and moiſtened by different veſſels, namely, by *veins*, *arteries and lymphatics*. The texture of the gums is of a *coriaceous* nature, with fibres interwoven like a hat's felt, very cloſe and *elaſtic*, of a pale vermilion colour; all the border of the ſockets in both the inward and outward ſide of the jaw, is covered by the gums, which inſinuate between all the teeth, and adhere ſo cloſely to the neck of each of them, as to prevent any thing acid or ſharp from touching the ſockets. Before the teeth come out, the gums are all of a body, without the leaſt ſeparation; and as the teeth begin to ſhoot out, they pierce the gums and make ſo many holes as there are teeth in the *mandibles.*

The gums are joined to the jaws by the Perioſtium, which they every where cover. The outward covering of the gums extends itſelf from the crown or body of the teeth over the cheeks and lips, and ſeems in every reſpect to be a continuation of the ſame membrane.

The inward gums of the upper jaw, go from the internal part of the neck of the teeth, as far as the circumference of the roof of the *palate*; and thoſe of the lower *mandible*, as far as the circumference of the baſis of the tongue.

When a tooth happens to fail, the gum covers the orifice of the ſocket, which being ſoon ſhut up or deſtroyed, the external part of the gum joins with the internal one, and they unite themſelves very cloſely together, becoming ſo hard and firm a body, that we ſee men, who, after having loſt all their teeth, bruiſe the aliment with their gums, altho' they cannot cut or mince with them; in this caſe the gums re-aſſume the very ſame figure they had before the teeth appeared.

The gums no doubt are the preſervers of the teeth, ſince they keep them quite firm in their ſockets, and ſave them from being touched by any thing heterogeneous or pernicious, which might produce the moſt painful diſorders in the teeth, and even a total deſtruction of them.

The gums when properly ranged, contribute very much to the ornament of the mouth, for as theſe are of a vermilion caſt, and form a kind of a *creſcent*, or half moon, around the enamel, of each tooth; they ſet off in a more elegant manner the whiteneſs of the teeth, when we have occaſion to ſhew them by laughing, ſinging, &c.

Of the GENERATION *of* TEETH.

Nature in forming theſe bones, ſeems to deviate intirely from thoſe laws that ſhe has eſtabliſhed in the production of all other bodies, and to chuſe a peculiar uncommon method in this generation.

The greateſt part of natural productions have their beginning in their roots, but a tooth on the contrary does not begin to form its root till the body is perfectly finiſhed. The firſt ſubſtance that begins to appear in this body, is not the internal part, as one would imagine, but the external one, the fartheſt from the root, and what is called *Enamel*. This ſubſtance in its beginning is nothing but a mucous ſoft paſte, which acquires inſenſibly ſo much firmneſs, that it becomes at laſt a bony part, and excels all other bones, (as we have ſhewn in its proper place) in point of hardneſs and whiteneſs. When once this ſcale, or bony coat is formed, the tooth aſſumes directly a proper figure, and its inward part begins to be filled.

The germ of the teeth, like that of other bones before oſſification, is compoſed of a tiſſulated mucus, ſeparated and divided into a number of little cells; which are afterwards filled up with calcareous or bony matter, and conſtitutes the ſolidity of the bone. This germ is contained in little lodges or *cells* of the ſocket, which it ſtretches in proportion as the bulk of the tooth augments, and ſpreads; at the ſame time its membrane increaſes, and takes hold of the roots, and forms the *perioſtium* that ſurrounds it.

The body of the tooth being quite finiſhed, the root takes then its due form, and as it grows ſtronger, it lengthens by degrees until it becomes of a proper length; the extremities grow firm and bony, leaving however a free paſſage to the veſſels, that run through the cavity of its root, and penetrate with their nouriſhing juices to the very inward body of the tooth. While the root grows thicker and ſtronger, finiſhing itſelf within the ſocket, the body of the tooth riſes towards the gum, and attempts to come out. It begins by dilating the partitions of the ſocket, and being level with this bony border, it cuts immediately the *membrane*, in which it is incloſed, then the other *membrane* that covers the ſocket, and at laſt the gum; in this manner ſhoot forth the teeth.

The partitions of the ſockets will lengthen in proportion as the teeth draw nearer the gums; but altho' in lengthening they are compreſſed and grow harder, ſtill they retain an elaſticity, by which they render the teeth ſafer and ſtronger againſt the impreſſion of any accident.

The ſame œconomy we find in the *molares*, that are furniſhed with more roots, and conſequently have more *cells* in their ſockets, which always multiply at the ſame time, when the roots appear, as was ſaid before. It would be natural to think that in thoſe teeth that have but one root, their ſockets ſhould be found greater in diameter than the root itſelf, as the ſocket has taken the form and figure of the body of the tooth, which is firſt of all formed in it, and is always of a larger diameter than the root, but it is never ſo on account of the above mentioned *elaſtic* force belonging to the partition of the ſocket, inſomuch that as ſoon as the body of the tooth is out of the ſocket, the ſocket contracts, and adapts itſelf, by degrees, to the figure of the roots, holding the tooth ſo firm as if it were fixed in a vice or ſcrew.

Of the ERUPTION *of the* TEETH.

Children, when they are brought into the world, have generally no teeth; I ſay generally, becauſe ſome have been found with two, three and even four *inciſores*; two in the upper jaw, and two in the lower one; but theſe caſes are not to eſtabliſh a rule, being only an exception.

Teeth appear ſooner or later, according to the weaker or ſtronger conſtitution of the child; there have been ſome of them who have cut their teeth when they were two or three months old, and ſometimes not before they were a year or fifteen months; but for the generality, in the fifth, ſixth, or eighth month after their birth the firſt tooth begins to appear. The two ſmall *inciſores* of the lower jaw are the firſt that come out; the one fifteen days after the other.

The large *inciſores* of the upper jaw appear almoſt at the ſame time; then two appear in the lower jaw at the ſide of the former, and then other two in the upper jaw; this is the general order in which the *inciſores* are ſeen. When the child is eleven months, or a year old, the lower *canini* appear almoſt always at the ſame time; and a few days after, the upper canini likewiſe ſhoot forth together, and theſe cauſe greater pain than the former.

When children are about ſixteen or twenty months old, the two ſmall lower grinders come out, and in a few days after the other two of the upper jaw; the other four *molares* do not generally appear until the child is two years old, one at each ſide of the mandibles. Theſe make twenty in number, and are called *milk-teeth*, the child remaining in this ſituation until about the ſixth year of its age.

The order we have deſcribed, is not always exact, for we often ſee the ſmall grinders ſhoot forth ſooner than the *canini*, and the *canini* quicker than the lateral *inciſores*. At the age of five or ſix years, the other four *molares* appear next to thoſe lately come out in each mandible. Towards the eleventh or twelfth year, four other *molares* come out in the ſame order, as do likewiſe four others in the 17th or 18th, which in all make 28, viz. eight *inciſores* or fore teeth, four *canini*, and 16 *molares* or grinders; with theſe teeth we generally continue until the four laſt molares, called *dentes ſapientiæ* appear; the exact time of which is very uncertain, tho' uſually it happens at the age of 25, or even 28; nor are there inſtances wanting of their not appearing before the age of 50, when they are for the moſt part accompanied with tumours and defluxions on the neighbouring parts which proceed from the preſſure cauſed by the crown of the tooth, on the ſides of the ſocket, and on the fleſhy and membranous point of the gum, which at that time of life, is become more hard and obdurate. At the age of ſeven or eight years, the *inciſores*, the *canini*, and the ſmall *molares*, are ſhed in the ſame order as they did appear. When theſe are gone, as many ſtronger and more beautiful teeth take their place.

It is remarkable, that if one of the *milk-teeth* is drawn before it is looſe, we find in it a root as firm as that of the *ſecond* tooth; but on the contrary, if it is drawn when it is looſe, there is no root at all: this has given riſe to a variety of opinions, concerning the deſtination, or rather deſtruction of the roots of the milk-teeth : it is imagined by ſome, that they are entirely conſumed by a flux of acid humouts, which abſord the calcareous matter of the roots, and ſo decompoſe the conſtituent parts; while others ſuppoſe, that theſe roots are incorporated into the ſubſtance of the ſecond teeth. But as theſe ſuggeſtions are not ſupported by the leaſt appearance of fact, we ſhall not therefore take up the time of the reader, to prove the contrary of them; but ſhall only obſerve, ſuch an acid humour could not exiſt without deſtroying all the teeth, and that ſuch an incorporation into the ſubſtance of the ſecond tooth has never yet been found. It appears by ſeveral of the later diſcoveries made in anatomy, that many parts neceſſary to the body, in the embrio and infant ſtate, are totally loſt and obliterated in that of adults, and that thoſe parts which are become uſeleſs and redundant in the ſyſtem, are abſorbed, and taken up by the lymphatic veſſels to be afterwards thrown out at the different emunctories of the body. That this is in reality the caſe with the roots of the milk-teeth, may be fully aſcertained by a variety of ſimilar facts, which the nature of this work won't admit to enumerate.

Sometimes, tho' ſeldom, the large *molares*, and even the *dentes ſapientiæ*, will ſhed, as happened lately to a lady, who was tortured with a moſt exquiſite pain in one of the *dentes ſapientiæ*, on the right ſide of the lower jaw. I felt the tooth quite looſe, which I drew with my fingers, but found no root to it; this I concluded to be owing to another tooth lying under it, which I ſoon perceived on further examining of the ſocket: as the excruciating pain ſtill continued, the lady could not be perſuaded that there was another tooth to come out, but that the root of the former was left behind; however, the appearance of the new tooth, not long after, fully convinced her, that the pain was entirely owing to the ſmallneſs and firmneſs of the ſocket, which retarded the egreſs of the young tooth, and obliged it in a manner to grind its paſſage out.

An opinion prevails, that there is a very great riſque in drawing *milk-teeth* before they are looſe, but in reality, there is not the ſmalleſt danger, and indeed, when they are carious, or any other way painful, it is abſolutely neceſſary to draw them, to prevent as much as poſſible an inflammation of the gums, and adjoining parts, which might deſtroy the germ of the ſecond tooth.

It is ſometimes neceſſary to draw thoſe teeth that lie acroſs, or ride upon one another, (a very diſagreeable ſight) in order to give a more exact and uniform arrangement to the reſt. This defect of order in the *canini* and *inciſores* in general, proceeds from an extreme narrowneſs of the jaws. But the operator muſt be very circumſpect in examining every circumſtance relative to the tooth and ſocket before he draws a milk-tooth, for if a part of the ſocket ſhould be broke and give way, the ſecond tooth will always come out in an irregular manner.

Diſorders incident to Children in teething, and the manner of treating them.

The eruption of teeth in children, is often attended with the moſt fatal conſequences, by exciting fevers, convulſions, gripes in the inteſtines, acidities in the ſtomach, and finally by introducing a great degree of irritability in their tender conſtitutions, ſo that they become more liable to a greater variety of diſorders.

Children ſuffer in teething, firſt, in proportion to the delicacy and ſenſibility of their conſtitutions; Secondly, to the number and figure of their teeth that puſh out at the ſame time; Thirdly, to the ſtate of the gums, which in ſome children is found to be more tenſe and liable to inflammation than in others.

Children who are originally of a delicate habit, or who have been rendered ſo by milk of an improper quality, or by any other cauſe that impairs their digeſtion, and produces acidities in their ſtomachs and inteſtines, are extremely liable to convulſions in teething; on the contrary, children of a ſtrong robuſt make, whoſe food is coverted into proper nouriſhment, are leſs ſubject to convulſive diſorders, but are liable often to a degree of fever, which in ſome meaſure facilitates the eruption of the teeth. The number and figure of the teeth that ſhoot out at once, will greatly increaſe the pain, for the blunt flat *molares*, will meet with a much greater reſiſtance, and a greater degree of laceration, than the ſharp pointed *inciſores* or *canini*.

At the ſame time the *canini* will prolong the pain, from their wedge-like figure, which is continually delating the ſocket and gum, till the tooth has compleated its growth.

From this great difficulty, that teeth have to cut the gums, many miſchiefs are frequently produced; for as inflammation is always the conſequence of laceration and preſſure, that, by going too far, occaſions frequently ſwelled glands about the throat and neck, which ſometimes ſuppurate; and even ulcers in the gums, and neighbouring parts, have been produced. In order to mitigate, and in ſome meaſure prevent the diſorders ariſing from teething,

ing, it will be neceſſary to conſider well what has been already ſaid in regard to the tendency of nature to inflammation in ſtrong and robuſt children, and to convulſions, gripes and looſeneſs in the weak, tender and delicate. In the firſt caſe, the degree of fever and inflammation, may be lowered, by keeping the nurſe upon a low diet, avoiding animal food, ſpices, or whatever tends to ſtimulate and encreaſe the circulation; frequent, but ſmall doſes of rhubarb, ought to be adminiſtered to the nurſe, which will gently purge the child, in the ſafeſt and moſt commodious manner; in the mean time, if the gums are much ſwelled, ſcarrifying them with the point of a lancet, ſo as to make them bleed at ſeveral parts, will empty the diſtended veſſels, and remove the tenſion from the inflamed gums; and where the fever runs high, even bleeding with leeches or the lancet, will be of great ſervice.

In the other caſe, where convulſions are ſo often the conſequence, we muſt endeavour to prevent theſe frightful ſymptoms by every method that may tend to ſtrengthen and confirm the conſtitution, ſuch as having a ſtrong and healthy nurſe, taking care that ſhe lives on the moſt ſimple and nouriſhing food, giving the child a wholeſome country air, with a good deal of exerciſe, and exhibiting ſmall doſes of aromatic infuſions of the bark, powder of tin, or ſuch like.

Where a looſeneſs and gripes prevail, it would be neceſſary to take every method to prevent that tendency to acidity which moſtly takes place in infants, whenever digeſtion is any way diſturbed; this is beſt done by giving frequent, but ſmall doſes of the abſorbent powders, conjoined with aromatics; and perhaps rhubarb, or more aſtringent ſimples, with opiates, may be found neceſſary.

In children of relaxed habits, whoſe gums are looſe and flabby, there is very little tendency to inflammation,

mation; in that caſe applying mild aſtringents (ſuch as a decoction of roſe buds in vinegar) to the gums by the nurſe's finger, will help greatly to brace up and facilitate the eruption of the tooth. But in all caſes, where the ſymptoms are troubleſome, and the tooth tardy in coming out, the only effectual means is to make a free exit for it by inciſion, and to cut the gum quite down to the tooth; and indeed where ever a tooth ſeems ready to appear, and the child is pining and ſuffering much, we ought to recur immediately to inciſion, and in that way remove the pain that is occaſioned by the diſtraction of ſuch ſenſative parts.

Sometimes where the gum has been already cut, and the teeth very ſlow in growing, the parts unite, and a *cicatrix* is formed above it; here we ſhould again cut the gum and *perioſtium*, ſo as to lay the tooth quite bare.

In ſome ſtrong and healthy children, a number of teeth will puſh out at the ſame time, by which means the ſymptoms are greatly aggravated; here alſo we ſhould give a free exit by inciſion, then gentle emollients ſhould be applied to the gums, and every thing that is irritating ſhould be avoided.

Particular attention ſhould be paid to the leaſt ſore or ulcer that may be formed about theſe parts, leſt they deſtroy the germ of the ſubſequent tooth.

Of the DISORDERS *of the* TEETH.

The teeth are ſubject to a variety of diſorders, which may be divided into thoſe ariſing from internal or external cauſes. The firſt have their riſe from the juices being contaminated by ſcurvy, ſcrophula, venereal infection, or whatever induces a cachexy of the humours.

Alſo it is obſerved, that women are more liable to tooth-achs and

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fluxions upon the gums, during the time of pregnancy, than at any other; perhaps from the particular ſympathy of nerves, that is ſo peculiarly ſhewn upon the ſtomach, &c. at that period.

All diſorders in the gums, infect the teeth, and are the cauſe of long and painful ſuffering. Teeth generally fail by ſome of the above cauſes.

The external cauſes are alſo many. The general ones are, the uſe of aliments too hot, or too cold, the different impreſſion of air, all ſhocks given to the teeth, which affect the nerves, the vapours that ariſe from the ſtomach and lungs, and leave a noxious and diſagreeable ſlime on the teeth; any particles of food that ſtick betwixt the teeth and putrify; keeping the head uncovered and expoſed to the air; ſleeping bareheaded, as likewiſe the exceſſive uſe of ſmoaking and chewing tobacco; the many improper remedies alſo that are made uſe of to keep the teeth clean, and the *cauſtics* applied in order to mitigate the pain, are always ſure to deſtroy thoſe they unluckily touch; hence we may ſee of what importance it is, never to make uſe of any remedies but what are approved of by a ſkilful perſon. Sugar, when uſed immoderately, is another enemy to the teeth; but one of the moſt dreadful deſtroyers is *mercury*. One ought therefore to be extemely cautious in uſing it. All *mineral* exhalations are alſo very pernicious, as we ſee by daily experience in all thoſe perſons that work in any of the *quick-ſilver*, *lead*, or *copper* mines, &c. ſuch people generally have their teeth corroded, diveſted of their *enamel*, and ſome times entirely waſted away by the *corroſive* particles exhaling from thoſe *minerals*. Among the external cauſes, however, negligence may be reckoned the firſt; for let the lymph be ever ſo pure, and digeſtion ever ſo regular, there are always ſome viſcid exhalations that are apt to ſettle upon the teeth; theſe can eaſily be removed, but if neglected, may prove the cauſe of many miſchievous diſorders, as we ſhall ſhew hereafter.

It is not my intention to give my reader a liſt (as many have done) of the various diſorders incident to the teeth, but to comprehend them under two ſingle articles, namely, *eroſion* and *caries*; and ſhall take notice likewiſe of what is commonly called the *tartar*. *Eroſion* is a diſorder that renders the teeth rough, and worm-eaten.

It affects only children, either when the firſt teeth ſhoot forth, or when the ſecond ones appear. The original cauſes of theſe diſorders are the ſmall pox, the meaſles, and all thoſe diſorders that contaminate the juices. It penetrates more or leſs, according to the hardneſs and firmneſs of the teeth; and therefore if the diſeaſe ſhould ſeize the child, when his teeth are not ſufficiently firm and oſſified, it muſt be attended with bad conſequences, meeting with little reſiſtance in the parts not ſufficiently oſſified.

But if it ſhould come on when the *milk* teeth are ſhedding, and the new ones appear, it will be of no harm to the tooth that has not as yet come out. The *enamel* of the tooth can never be hurt, but when wrapt up in its membrane, as it is then nothing elſe but in the ſtate of a ſoft mucus, which being rendered acrid by the ſame cauſe, the *enamel* will be intirely conſumed. Whenever this diſorder appears, it can only be of detriment to the parts that are not ſufficiently firm and oſſified. Children that are infected *in utero*, with the ſcurvy, the venereal diſeaſe, &c. will bring along with them the ſeeds of thoſe diſorders, ſo pernicious to the teeth, if proper means are not made uſe of to prevent it. But if the original cauſes ſhall be thoroughly eradicated, the milk teeth will only ſuffer, and thoſe that ſucceed them will be found quite untouched.

In order to purify the conſtitutions of ſuch children, it will be neceſſary to make uſe of thoſe means proper to produce a good chyle, and to correct the ſtate of the juices, which is the province of the phyſician.

It is neceſſary likewiſe to chuſe a good nurſe, whoſe milk is not thick; for then it is not ſo eaſily aſſimilated by the infantile powers; nor too ſerous; for then it wants the proper ſubſtance, ſo neceſſary to form a good nutritious juice, the want of which prevents bones from growing in their natural form.

The child ſhould be kept in a good and pure air, and all occaſions taken to give it due exerciſe in the arms of the nurſe, &c. Theſe are precautions that will prevent this diſorder from affecting children. It is worth obſerving, that if the eroſion happens to come after the child is weaned, that is to ſay, when he is from two to ſix years of age, a methodical way of living, proper food and good air, will be the means to prevent it. Many have thought, without reaſon, that this diſorder could affect nothing but the body of the tooth, and that the root was not ſuſceptible of it. It is true that the roots do not appear ſo rough and worm-eaten, as the body of the tooth, but ſtill they are ſhorter, more crooked, and of an imperfect form, which they could never get but from this tendency of the humours to *eroſion*, or from the *rickets*, which is a diſeaſe ſo fatal to children, and proceeds from the ſame cauſes as the *eroſion*; it alſo proves very pernicious to the teeth, and all other bones.

Of the CARIES.

As ſoon as the teeth make their appearance, the *caries* begins to attack them, and conſequently they ſtand in need of proper aſſiſtance. One ſhould think that their hardneſs would render them leſs ſuſceptible of it, but they are even more ſubject to a *caries* than all other bones; it is eaſy however to trace the cauſes of it. As teeth are of a cloſer texture, their veſſels are more compreſſed, and therefore

fore obſtructions are more eaſily occaſioned, and alſo when cold happens to ſtrike them to a certain degree, or when the bony fibres ſuffer by ſome extraordinary effort. If the juices that circulate through the ſmall channels of the teeth, are too thick, or are any way vitiated, the teeth will therefore be more liable to be contaminated, but always in proportion to the impreſſions they ſhall receive.

Teeth that have been affected with the eroſion, at the ſame time they were forming, are more ſubject to be carious, on account of the bad condition of their veſſels, and therefore are more difficultly preſerved.

Various are the ſpecies of *caries*; almoſt every part of the teeth is affected by it, and both internal and external cauſes produce it. A *caries* may be divided into ſoft, ſuperficial, deep, and dry; it attacks the root, the *neck*, or the *crown* of the teeth. The *caries*, that proceeds from internal cauſes, namely, the ſcurvy, &c. *generally* affects the root of the tooth, often the internal ſurface, ſometimes the external, and even the inward cavity of the body.

Such a *caries* is more difficult to be known, than that which proceeds from external cauſes, chiefly when it attacks the *root* or *neck* of the tooth; for as the former is buried in the ſockets and the latter is covered by the gums, one cannot perceive it, and therefore we can only conjecture, that there is a caries from the torturing pains that are produced; but theſe conjectures are often falſe; for the pain may proceed from ſome irritation affecting the *cord* of the tooth or the *perioſtium*, that covers and lines the root; the conſequences therefore ariſing from this ſort of caries are very bad, for it is moſtly neceſſary to draw the tooth itſelf.

The caries that proceeds from external cauſes, is viſible, and conſequently by admitting of the neceſſary operations, more eaſily removed. A caries, the longer it is allowed to run on, the deeper it goes, and is therefore the more difficult to cure.

The ſoft and dry caries are not dangerous, if their progreſs is quickly and properly ſtopt.

Every caries of the teeth is more or leſs difficult to be eradicated according to the part it affects, as that renders the operation more or leſs difficult.

Although teeth begin to be affected with the caries, as ſoon as they appear, ſtill it muſt be allowed, that the time in which they are more ſubject to it, is from 25 to 50 years of age.

It is worth remarking, that when a tooth is affected be the caries on that ſide which reſts on another tooth, it alſo affects the contiguous one; from which we may argue, that the particles exhaling from the *carious* tooth muſt be corroſive; this happens, not only in the lateral, but alſo in the oppoſite teeth; for when a *caries* appears on the upper ſurface of a tooth, it is then applyed to the ſurface of the oppoſite, and in the ſame manner affects it, as is particularly ſeen in the *molares*.

The *caries* ſometimes proceeds from fractures in the teeth; but is generally cauſed by falls, and from violent efforts in breaking ſomething of a hard nature with the teeth.

The fractured tooth can never be repaired; however it ought not to be neglected, but carefully examined, as it requiers the greateſt aſſiſtance of art; for the tooth has ſometimes in the fractured part ſmall cutting points, that will be of great detriment to the tongue, and be the cauſe of very painful and dangerous wounds; therefore they muſt be immediately taken off, to prevent miſchief to the tender parts that they touch.

Whenever the *caries* appears, it muſt be opened by a maſterly hand to the very bottom; if in ſo doing, the cord of the tooth is diſcovered, the operation will prove very painful; but ſtill it muſt be deſtroyed, either with an inſtrument, the actual cautery, or ſome cauſtic liquor.

We ought to be very attentive in the operation; for if we do not utterly deſtroy the ſaid cord, but only prick it, the moſt raging pains will ſucceed, together with an inflammation, and the inevitable neceſſity of drawing the tooth.

Such a cure cannot but be very torturing, for not only the ſenſitive parts of the tooth are to be expoſed to the impreſſion of the air, but alſo to be touched with an inſtrument, ſo as to be deſtroyed. The ſkilful operator muſt endeavour to aſſuage the pain of this patient by the aſſiſtance of medicines.

When a tooth by the loſs of its cord i sbecome inſenſible, it muſt be filled with lead or gold, in order to prevent any acid or ſaline particles from getting through the hole, where the *cord* went into the ſocket, to hurt its delicate membranes; for then there could be no means of redreſs, by drawing the tooth; hence all the care that had been taken, and all the pain that had been endured ro render the tooth inſenſible, would then be of no avail.

Of the TARTAR.

We ſhall now proceed to treat of what is commonly called the Tartar. From whatever occaſional or ſecondary cauſe the tartar proceeds, the principal one is certainly negligence. It hath been called by ſome a *cancer*, becauſe it corrodes the gums and the ſocket in ſuch a manner that the teeth will fall out for want of ſupport. It is generated by the fragments of aliments that ſtick to the teeth, by a vitiated *ſaliva*, or by an imperfect digeſtion, &c.

Whenever this viſcid matter is allowed to ſtick to the teeth, it grows hard, and degenerates into *tartar*, and will augment by degrees, from new particles of aliments continually joining the old ones; but this would never happen if the teeth were carefully cleaned every morning with ſomething proper for that purpoſe.

This tartar is a kind of cruſt, not only diſagreeable to the eyes, but alſo productive of very fœtid exhalations.

There are various ſorts of tartar, *viz.* The yellow, the whitiſh, the black, and even the green *tartar*, which is the moſt pernicious, as it often deſtroys the enamel. The lower *inciſores* are more ſubject to the *tartar*, chiefly in their internal ſide, becauſe of their vicinity to the tongue, and of the *ſaliva* which runs moſtly that way; although perſons grown in years are generally more liable to be troubled with the tartar, yet we frequenly ſee the teeth of young people all covered with it.

Whatever is the cauſe that produces this tartar, or whatever the time of its appearance, it ought to be removed as ſoon as poſſible, otherwiſe the gums, by the compreſſion, will ſwell, and obſtruct the regular courſe of the fluids through the *lym-*

phatic and blood-veſſels, which will therefore be liable to putrify and deſtroy, in a ſhort time, the gum, the ſocket and *perioſtium* of the root.

This is the reaſon why teeth grow looſe and painful; at that time, if you were even then to cut off this *heterogeneous* body, it would be too late to hinder the loſs of the tooth, which is now left without any ſupport from the gums, the *perioſtium* and the ſockets.

The *tartar* ſometimes is even thicker than the body of the tooth, to which it ſticks ſo cloſe, that they ſeem to form one ſingle body; therefore it requires a dextrous and ſkilful hand to remove it; in ſuch a caſe we muſt endeavour to render the courſe of the humours free again to the gums, by reſtoring them with proper aſtringent and antiſcorbutic medicines.

Some teeth, after having been freed of their *tartar*, will ſhew a very beautiful enamel, which makes it evident that ſuch a *tartar* is not of ſo acrid or corroſive a nature as the green kind generally is.

Of the DISORDERS

The Sockets are liable to.

The ſockets are alſo ſubject to *caries* as well as the teeth, although not ſo often. The cauſes that produce ſuch an effect in them, are the very ſame with theſe formerly delivered as the internal cauſe of *caries* in the teeth.

The ſockets are alſo liable to be deſtroyed by degrees, in the ſame manner as the roots of the milk-teeth.

This fatal diſorder proceeds from a ſtagnation of humours in the gums, where they putrify, or from any ſharp and corroſive particles, that may penetrate and corrode them inſenſibly. Alſo from a ſtagnation of the fluids in the ſerous or blood-veſſels of the gums; the ſockets and their partitions will ſometimes grow ſoft and become entirely of a fleſhy conſiſtence, which therefore leaves the tooth without ſupport. Old men generally loſe their ſockets entirely, becauſe the nutritious juices that formerly ſerved to nouriſh the gums are now no longer diſtributed to them.

It is worth obſerving, however, that perſons of a robuſt conſtitution are not ſo liable to loſe their ſockets, and conſequently their teeth; for we ſee people extremely old with all their teeth, with their gums quite perfect, and therefore their ſockets muſt be ſound and well.

There is no other way to prevent thoſe diſorders, but by taking a particular care in cleaning the gums, never letting any corroſive particles, or any viſcid matter, that is likely to putrify, enter into the ſocket, ſo that the gums may become ſtrong and apply themſelves cloſely round the necks of the teeth.

Of the Diſorders of the GUMS.

Whenever the gums are affected, they generally loſe their colour, their firmneſs, and conſequently their adheſion to the teeth; they will at different times appear pale, flabby, relaxed, rough, corroded, inflamed and wrinkled. The lividity of the gums proceeds from ſome defect in the circulation of the blood through them.

To remedy as much as poſſible ſo diſagreeable a circumſtance, it will be proper to rub the gums pretty often in the morning, and likewiſe to ſcarify them in order to let out ſome blood, and in that way promote the circulation.

If after theſe means have been uſed, the complaint remains the ſame, it will be then neceſſary to have the phyſician's aſſiſtance, as the fault muſt be rooted in the conſtitution.

The gums grow often ſo thick that they, in ſome meaſure, reſemble pincuſhions, and by communicating their ſwelling to the lips, they will greatly deform the mouth and face.

This diſorder proceeds either from the compreſſion of the tartar, or a local *plethora.*——If it proceeds from the firſt of theſe, the tartar muſt be removed immediately, then ſcarify or prick the gums, and adminiſter proper antiſcorbutic and aſtringent medicines fit to brace them up.

But if the ſwelling proceeds from a *plethora*, which is eaſily known, a proper method muſt be taken to evacuate the vitiated humours, and to diminiſh the thickneſs of the gums, in the points that run in betwixt each tooth, where the ſwelling more manifeſtly appears; then proper aſtringents ſhould alſo be applied to prevent the complaint from recurring; the patient muſt live on a proper regimen, and ſubmit to the neceſſary ablutions.

A ſwelling as big as a ſtrawberry, ſometimes appears in the gums of young people, which is more unſightly and deformed than dangerous; but it is neceſſary to diſcuſs it as ſoon as poſſible. The ſame cauſes that ſwell the gums, will alſo produce excreſcences upon them.

If theſe proceed from an external cauſe, the effect will ceaſe when once that is removed; but where the cauſe is internal, all outward applications will be uſeleſs; ſometimes theſe excreſcences will be greater than at other times.

When they begin, they are never dangerous, but if they are neglected and increaſe, the tooth ſoon becomes looſe, and of courſe is ſoon loſt. Abſorbent remedies are to be applied in the beginning; but when the excreſcence is arrived to a certain ſize, then it can't be deſtroyed, but either by carefully cutting off the redundant part of the gum, or by conſuming it ſome other way.

The ſubſtance of the gums may be diminiſhed either for want of ſufficient nouriſhment, or by being too tenſe and firm; for then they are apt to hinder the fluids from circulating properly; hence it happens that the teeth are deprived of their neceſſary ſupport, and the gums become a very diſagreeable ſight to the eye. The want of juices, and the contracted ſtate of the veſſels (which are the chief cauſes) may be removed by means of proper emolients, &c. which by relaxing the parts that were too tenſe and firm, will promote the dilatation of the veſſels, and conſequently the courſe of the humours will be more free, and their quantity augmented.

We muſt not however delay the cure too long, for ſometimes art comes too late. The paleneſs of the gums proceeds from the deficiency of the globular part of the blood, which may be occaſioned likewiſe by the narrowneſs of the veſſels. It is eaſy, by rubbing the gums pretty often, to recall the blood, and conſequently reſtore to them their natural colour.

Whenever the gums are relaxed, and want that tenſity and firmneſs which is ſo abſolutely neceſſary for their being in a ſound ſtate, various complaints are generally the conſequence, and therefore proper *antiſcorbutic* aſtringents muſt be made uſe of, in time, to prevent and remedy ſuch fatal diſorders.

The gums are ſometimes rough, as if ſpread all over with little grains, like millet ſeeds, under the ſkin. Theſe little tumours are hard and ugly, ſometimes will come to a ſuppuration, and render the gums very painful; theſe are therefore to be prevented by applying very ſtrong reſolvents, then we muſt make uſe of detergents, and come by degrees to aſtringents.

Children who eat too much ſugar, or ſweetmeats, generally have their gums corroded: *Confectioners* and

Chymiſts are ſubject to this diſorder, becauſe the ſaline and corroſive particles, that fly from the ſugar and minerals, affect their gums: This diſeaſe ſhould by no means be neglected; and firſt of all, the cauſe muſt be removed; then the proper aſtringent and ſweetning medicines muſt be adminiſtered, to purify the maſs of blood; and it is very neceſſary to abſtain from every thing too ſalt, ſpicy, high ſeaſoned, or what elſe may render the blood acid or ſharp.

The inflammation of the gums proceeds, for the moſt part, from the impreſſion of cold air: The beſt remedy therefore is to keep them warm.

That the gums are alſo ſubject to cancerous tumours, from the above cauſes, evidently appears; and they ſhould always be ſpeedily extirpated. Such a diſorder muſt be conſidered as a local affection that has proceeded from ſome glandular, or vaſcular part of the gums being vitiated, together with an internal or prediſpoſing cauſe in the habit; it requires, therefore, a very ſerious and mature conſideration before ſuch a cure is undertaken, leſt we ſhould hurry on to the operation too precipitately.

Sometimes ulcers will affect the gums; their external cauſe are rotten teeth, the tartar, violent falls, blows, vitiated ſaliva, or any other injury offered to them.

The ſcurvy and vitiated humours are the internal cauſes, and therefore a radical cure of the ulcers will never take place, except theſe are entirely got the better of.

They are ſometimes more, ſometimes leſs deep in the gums; when they are not deep, aſtringents and antiſcorbutics may be of uſe; but when they are deep, they will even produce a ſwelling, and an excreſcence in the gums; and therefore we muſt take care to cut off the ſuperfluity, and follow the method that was mentioned ed when we ſpoke of tumours and excreſcences.

Ulcers are of different ſorts, and vary greatly in their appearance, but as they always proceed from the above cauſes, (and the nature of this work will not allow of prolixity) it will be unneceſſary to deſcribe them.

The *abceſſes* or *impoſthumes*, that are formed in the gums, proceed, for the moſt part, from ſome bad tooth, or from ſome tooth not drawn in time. Or they may proceed from the intemperature of air, from ſome violent blow, &c. as alſo from the extraction of a tooth difficult to draw. When the *cord* of the tooth is left uncovered, either by a *caries;*

or ſome other cauſe, it ſwells and inflames, communicating the inflammation to the *perioſtium* that covers the root, and lines the ſocket and ſubſtance of the maxillary bones, then proceeds to the ſocket, and ſo to the gums, where the abceſs is formed, from its being a much ſofter part: we muſt not neglect to examine the tooth, and if we find that to be the cauſe, it muſt be drawn immediately, even if there was a *fluxion* of humours upon the gums; for the corrupted matter that ſtagnates in that place, might be very pernicious to the contiguous bony ſubſtance: then we muſt make uſe of thoſe remedies that are preſcribed in ſuch caſes, in order to make a perfect cure; for if it was not ſpeedily effected, it would prove deſtructive to the gums, the ſockets, and contiguous teeth.

The ſame cauſes alſo will produce *fiſtulas* in the gums, which are more or leſs of a malignant nature.

In order to remove them, it will be proper to make uſe of the ſame things that were preſcribed for the *abceſſes*, or of any thing elſe that the ſkilful practitioner will find neceſſary.

Little Cancers that appear ſometimes in the gums may be deſtroyed by a cauſtic: thoſe that ariſe from ſome internal cauſe, are more malignant and ſtubborn; ſometimes they are very numerous and ſmall, of colour different from other cancers, and almoſt always accompanied by ulcers ſomewhere elſe.

Thoſe that proceed from the fluids being tainted by the venereal diſeaſe, are diſtinguiſhed from thoſe that ariſe from a ſcorbutic humour; for the former are deeper, more painful, and full of blood, yielding a greater quantity of fœtid matter, and occaſion a great ſwelling in the lips.

The ſecond are of a milder nature, and not ſo inflammatory. Without purifying the vitiated humours internally, as was formerly hinted; all outward applications will be quite uſeleſs.

The gums are alſo ſubject to ſuppuration, and in this way, not only they are liable to be deſtroyed, but the teeth alſo. I have remarked that fat perſons are more ſubject to this diſorder than thoſe of a meagre conſtitution, on account of their having a greater quantity of humours; the fore parts of the *inciſores*, *canini*, and ſmall grinders, towards the root, are moſt liable to be affected with it; they grow of a browniſh colour, and in proportion as the diſorder either increaſes or declines, they aſſume a different appearance.

Suppuration frequently happens in thoſe gums where the ſockets are wanting; the gum being, as well as the ſocket, diveſted of the perioſtium, and conſequently not able to adhere, is, by being left to itſelf, and expoſed to the air, affected with little ulcers that will ſoon occaſion ſuppuration; and therefore it becomes neceſſary (in order to avoid more dangerous conſequences) to cut off that part of the gum which is left unattached, and likewiſe to remove all other cauſes, ſuch as the ſurcharge of humours, &c. by exhibiting medicines that may be adapted to anſwer that end.

FINIS.

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